

No.

8900254



THE UNITED STATES OF AMERICA

TO ALL TO WHOM THESE PRESENTS SHALL COME:

University of Idaho

Whereas, THERE HAS BEEN PRESENTED TO THE
Secretary of Agriculture

AN APPLICATION REQUESTING A CERTIFICATE OF PROTECTION FOR AN ALLEGED NOVEL VARIETY OF SEXUALLY REPRODUCED PLANT, THE NAME AND DESCRIPTION OF WHICH ARE CONTAINED IN THE APPLICATION AND EXHIBITS, A COPY OF WHICH IS HEREUNTO ANNEXED AND MADE A PART HEREOF, AND THE VARIOUS REQUIREMENTS OF LAW IN SUCH CASES MADE AND PROVIDED HAVE BEEN COMPLIED WITH, AND THE TITLE THERETO IS, FROM THE RECORDS OF THE PLANT VARIETY PROTECTION OFFICE, IN THE APPLICANT(S) INDICATED IN THE SAID COPY, AND WHEREAS, UPON DUE EXAMINATION MADE, THE SAID APPLICANT(S) IS (ARE) ADJUDGED TO BE ENTITLED TO A CERTIFICATE OF PLANT VARIETY PROTECTION UNDER THE LAW.

NOW, THEREFORE, THIS CERTIFICATE OF PLANT VARIETY PROTECTION IS TO GRANT UNTO THE SAID APPLICANT(S) AND THE SUCCESSORS, HEIRS OR ASSIGNS OF THE SAID APPLICANT(S) FOR THE TERM OF *eighteen* YEARS FROM THE DATE OF THIS GRANT, SUBJECT TO THE PAYMENT OF THE REQUIRED FEES AND PERIODIC REPLENISHMENT OF VIABLE BASIC SEED OF THE VARIETY IN A PUBLIC REPOSITORY AS PROVIDED BY LAW, THE RIGHT TO EXCLUDE OTHERS FROM SELLING THE VARIETY, OR OFFERING IT FOR SALE, OR REPRODUCING IT, IMPORTING IT, OR EXPORTING IT, OR USING IT IN PRODUCING A HYBRID OR DIFFERENT VARIETY THEREFROM, TO THE EXTENT PROVIDED BY THE PLANT VARIETY PROTECTION ACT. UNITED STATES SEED OF THIS VARIETY (1) SHALL BE SOLD BY VARIETY NAME ONLY AS CERTIFIED SEED AND (2) SHALL CONFORM TO THE NUMBER OF GENERATIONS OF THE OWNER OF THE RIGHTS. (84 STAT. 1542, AS AMENDED, 7 U.S.C. 2321 ET SEQ.)

BEAN

'UI 722'

In Testimony Whereof, I have hereunto set my hand and caused the seal of the Plant Variety Protection Office to be affixed at the City of Washington, D.C.
this 31st day of July
in the year of our Lord one thousand nine hundred and ninety-two.

Attest

Kenneth B. Egan

Commissioner

Plant Variety Protection Office
Agricultural Marketing Service

Edward Madigan
Secretary of Agriculture



U.S. DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE

FORM APPROVED: OMB NO. 0581-0055

Application is required in order to determine if a plant variety protection certificate is to be issued (7 U.S.C. 2421). Information is held confidential until certificate is issued (7 U.S.C. 2426).

APPLICATION FOR PLANT VARIETY PROTECTION CERTIFICATE

(Instructions on reverse)

1. NAME OF APPLICANT(S) University of Idaho		2. TEMPORARY DESIGNATION ID5722		3. VARIETY NAME UI 722	
4. ADDRESS (Street and No. or R.F.D. No., City, State, and Zip Code) Moscow, ID 83843		5. PHONE (Include area code)		FOR OFFICIAL USE ONLY PVPO NUMBER 8900254	
6. GENUS AND SPECIES NAME Phaseolus Vulgaris (L.)		7. FAMILY NAME (Botanical) Leguminosae		FILING DATE June 19, 1989 TIME 1:30 <input type="checkbox"/> A.M. <input checked="" type="checkbox"/> P.M.	
8. KIND NAME Dry Bean - Dark Red Kidney		9. DATE OF DETERMINATION Feb. 1, 1986 April 1, 1987		FEE RECEIVED AMOUNT FOR FILING \$ 2150.00 DATE June 19, 1989 AMOUNT FOR CERTIFICATE \$ 250.00 DATE June 30, 1992	
10. IF THE APPLICANT NAMED IS NOT A "PERSON," GIVE FORM OF ORGANIZATION (Corporation, partnership, association, etc.) Land-Grant Univeristy				11. IF INCORPORATED, GIVE STATE OF INCORPORATION	
13. NAME AND ADDRESS OF APPLICANT REPRESENTATIVE(S), IF ANY, TO SERVE IN THIS APPLICATION AND RECEIVE ALL PAPERS James R. Myers Rt. #1 3793 N 3600 E Kimberly, ID 83341				12. DATE OF INCORPORATION	

PHONE (Include area code): (208) 423-4691

14. CHECK APPROPRIATE BOX FOR EACH ATTACHMENT SUBMITTED	
a. <input checked="" type="checkbox"/> Exhibit A, Origin and Breeding History of the Variety (See Section 52 of the Plant Variety Protection Act.) b. <input checked="" type="checkbox"/> Exhibit B, Novelty Statement. c. <input checked="" type="checkbox"/> Exhibit C, Objective Description of Variety (Request form from Plant Variety Protection Office.) d. <input checked="" type="checkbox"/> Exhibit D, Additional Description of Variety. e. <input checked="" type="checkbox"/> Exhibit E, Statement of the Basis of Applicant's Ownership.	
15. DOES THE APPLICANT(S) SPECIFY THAT SEED OF THIS VARIETY BE SOLD BY VARIETY NAME ONLY AS A CLASS OF CERTIFIED SEED? (See Section 83(a) of the Plant Variety Protection Act.)	
<input checked="" type="checkbox"/> Yes (If "Yes," answer items 16 and 17 below) <input type="checkbox"/> No	
16. DOES THE APPLICANT(S) SPECIFY THAT THIS VARIETY BE LIMITED AS TO NUMBER OF GENERATIONS?	17. IF "YES" TO ITEM 16, WHICH CLASSES OF PRODUCTION BEYOND BREEDER SEED?
<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> Foundation <input checked="" type="checkbox"/> Registered <input checked="" type="checkbox"/> Certified
18. DID THE APPLICANT(S) PREVIOUSLY FILE FOR PROTECTION OF THE VARIETY IN THE U.S.	
<input type="checkbox"/> Yes (If "Yes," give date) <input checked="" type="checkbox"/> No	
19. HAS THE VARIETY BEEN RELEASED, OFFERED FOR SALE, OR MARKETED IN THE U.S. OR OTHER COUNTRIES?	
<input type="checkbox"/> Yes (If "Yes," give names of countries and dates) <input checked="" type="checkbox"/> No	
20. The applicant(s) declare(s) that a viable sample of basic seeds of this variety will be furnished with the application and will be replenished upon request in accordance with such regulations as may be applicable. The undersigned applicant(s) is (are) the owner(s) of this sexually reproduced novel plant variety, and believe(s) that the variety is distinct, uniform, and stable as required in Section 41, and is entitled to protection under the provisions of Section 42 of the Plant Variety Protection Act. Applicant(s) is (are) informed that false representation herein can jeopardize protection and result in penalties.	

SIGNATURE OF APPLICANT <i>James R. Myers</i>	DATE 3/30/89
SIGNATURE OF APPLICANT <i>Gayle Lee Director IAES</i>	DATE 6-10-89

INSTRUCTIONS

General: Send an original copy of the application and exhibits, at least 2,500 viable seeds (*furnish only untreated seed*), and \$1,800 fee (\$200 filing fee and \$1,600 examination fee) to the U. S. Department of Agriculture, Agricultural Marketing Service, Plant Variety Protection Office, National Agricultural Library Building, Beltsville, Maryland 20705. (See Section 180.175 of the Regulations and Rules of Practice.) Retain one copy for your files. All items on the face of the form are self-explanatory unless noted below.

Item

- 9 Give the date the applicant determined that he had a new variety based on (1) the definition in Section 41(a) of the Act and (2) the date a decision was made to increase the seed.
- 14a Give: (1) the genealogy, including public and commercial varieties, lines, or clones used, and the breeding method; (2) the details of subsequent stages of selection and multiplication; (3) the type and frequency of variants during reproduction and multiplication and state how these variants may be identified and (4) evidence of uniformity and stability.
- 14b Give a summary statement of the variety's novelty. Clearly state how this novel variety may be distinguished from all other varieties in the same crop. If the new variety most closely resembles one or a group of related varieties: (1) identify these varieties and state all differences objectively; (2) attach statistical data for characters expressed numerically and demonstrate that these are clear differences; and (3) submit, if helpful, seed and plant specimens or photographs of seed and plant comparisons clearly indicating novelty.
- 14c Fill in the Exhibit C, Objective Description form, for all characteristics for which you have adequate data.
- 14d Describe any additional characteristics that are not described, or whose description cannot be accurately conveyed in Exhibit C. Use comparative varieties as is necessary to reveal more accurately the description of characteristics that are difficult to describe, such as plant habit, plant color, disease resistance, etc.
- 14e Section 52(4) of the Plant Variety Protection Act requires applicants to furnish a statement of the basis of the applicant's ownership. The applicant may be the actual breeder, the employer of the breeder, the owner through purchase or inheritance, etc.
- 15 If "Yes" is specified (*seed of this variety be sold by variety name only as a class of certified seed*) the applicant may NOT reverse his affirmative decision after the variety has either been sold and so labeled, his decision published, or the certificate has been issued. However, if the applicant specified "No," he may change his choice. (See Section 180.16 of the Regulations and Rules of Practice.)
- 19 See Sections 41 (i,j) and 42 of the Plant Variety Protection Act and Section 180.7 of the Regulations and Rules of Practice for eligibility requirements.
- NOTE: All information submitted in support of an application becomes PUBLIC INFORMATION once the certificate is issued. (See Section 180.17 of the Regulations and Rules of Practice.)

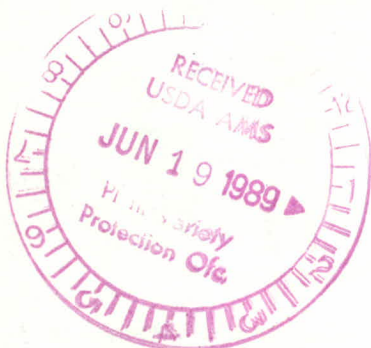


Exhibit A Origin and Breeding History of 'UI 722'

'UI 722' was an F_6 selection made by John Kolar in 1983 derived from the 1978 cross 'Mecosta' X (PI 226856 X 67-105) F_6 . The pedigree breeding method was used to develop this cultivar (Figure 1). It is now in the F_{10} generation. The parent 'Mecosta' is a late-maturing light red kidney released by Michigan State University. It has resistance to halo blight, bean common mosaic virus (BCMV), and tolerance to rust and ozone. 67-105 was a kidney breeding line developed by Marshall LeBaron at the Kimberly Research Station. Its characteristics are unknown to me. PI 226856, a Spanish cultivar, has a viny growth habit with medium-large white seed. It was reported to have BCMV and bean yellow mosaic virus resistance.

'UI 722' was tested in preliminary yield trials at Kimberly in 1985, and in advanced yield trials in 1986. It was tested at both Kimberly and Parma, and in New York State in 1987. In 1988, it was tested in two separate trials at the Kimberly and Parma locations (Exhibit D, Table 1).

Tests for resistance to BCMV were performed at Prosser, WA under the direction of Matt Silbernagel in 1988. 'UI 722' was resistant to the NY-15 and NL-4 races of BCMV, but susceptible to the NL-3 race of BCMV. These results are consistent with 'UI 722' possessing the dominant *I* gene for resistance to BCMV.

Canning trials were performed by American Fine Foods in Fruitland, ID in 1986. 'UI 722' performed satisfactorily when compared to 'Carmine' and 'California Dark Red Kidney'.

Figure 1. Pedigree for the dark red kidney UI 722.¹Cross: Mecosta X (PI 226856 X 67-105)F₆

Generation	Year	Comments
F ₁	1978	
↓		
F ₂	1979	Single plant selection
↓		
F ₃	1980	Single plant selection
↓		
F ₄	1981	Single plant selection
↓		
F ₅	1982	Bulked
↓		
F ₆	1983	Bulked
↓		
-	1984	-
↓		
F ₇	1985	Preliminary Nursery
↓		
F ₈	1986	Advanced Nursery
↓		
F ₉	1987	Advanced Nursery
↓		
F ₁₀	1988	Advanced Nursery

¹Crosses made in the greenhouse and all other generations grown in the field.

Seed increase made in 1987 from bulked seed maintained in the 1986 early generation nursery.

Exhibit B

Statement of Novelty

'UI 722' can be distinguished from other dark red kidney cultivars by seed characteristics and maturity. Its seed are, on average, larger than other dark red kidneys, and of similar size to the light red kidney 'Redkloud'. The seed are slightly darker than 'Charlevoix' but slightly lighter than 'Montcalm', and have a true "kidney" shape whereas seed of other dark red kidneys have a more "linear" shape. 'UI 722' blooms six to eight days later than 'Montcalm', and two days later than 'Royal Red'. On average in Idaho, 'UI 722' matures four days later than 'Montcalm' and three days later than 'Royal Red'. 'UI 722' has consistently out-yielded 'Montcalm' in Idaho with the exception of the 1988 CDBN and miscellaneous Kimberly trials (Exhibit D, Table 1).

UI 722 (P.V No. 8900254) has been uniform over the last 7 generations. UI 722 is most similar to 'Montcalm' but differs in that seed of UI 722 are lighter in color and more reniform in shape than Montcalm. UI 722 blooms and matures later than Montcalm.

U. S. DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE
LIVESTOCK AND SEED DIVISION

Exhibit C

OBJECTIVE DESCRIPTION OF VARIETY
Dry Edible Bean (*Phaseolus vulgaris* L.)

NAME OF APPLICANT(S) University of Idaho	EXPERIMENTAL NAME ID5722	VARIETY NAME UI 722
ADDRESS (Street and No. or R.F.D. No., City, State, ZIP) Moscow, ID 83843		FOR OFFICIAL USE ONLY PVPO NO. 8900254

Provide data for all characters unless indicated as "optional." Place numbers in the boxes for the characters or numerical values which best describe this variety. Measured data should be the mean of an appropriate number of well spaced (15-20 cm) plants. The Royal Horticulture Society or any recognized color standard may be used to determine plant color. Designate the color system used below.

COLOR SYSTEM USED R. H. S. Colour Chart	LOCATION OF THE TEST(S) TO EVALUATE THIS VARIETY Kimberly, Parma ID, New York																										
MARKET CLASS	2. MATURITY																										
<div>0 9</div> <table border="0"> <tr> <th>CLASS</th> <th>CHECK</th> </tr> <tr> <td>1 = Navy (Pea)</td> <td>Seafarer</td> </tr> <tr> <td>2 = Small White</td> <td>Aurora</td> </tr> <tr> <td>3 = Black</td> <td>Midnight</td> </tr> <tr> <td>4 = Pinto</td> <td>UI-114</td> </tr> <tr> <td>5 = Great Northern</td> <td>UI-59</td> </tr> <tr> <td>6 = Small Red</td> <td>NW-59</td> </tr> <tr> <td>7 = Pink</td> <td>Viva</td> </tr> <tr> <td>8 = Cranberry</td> <td>UI-50</td> </tr> <tr> <td>9 = Dark Red Kidney</td> <td>Montcalm</td> </tr> <tr> <td>10 = Light Red Kidney</td> <td>Redcloud</td> </tr> <tr> <td>11 = Yellow Eye</td> <td>Steuben</td> </tr> <tr> <td>12 = Other (specify)</td> <td></td> </tr> </table>	CLASS	CHECK	1 = Navy (Pea)	Seafarer	2 = Small White	Aurora	3 = Black	Midnight	4 = Pinto	UI-114	5 = Great Northern	UI-59	6 = Small Red	NW-59	7 = Pink	Viva	8 = Cranberry	UI-50	9 = Dark Red Kidney	Montcalm	10 = Light Red Kidney	Redcloud	11 = Yellow Eye	Steuben	12 = Other (specify)		<div>3</div> 1 = Early (80-90 days); 2 = Medium (90-100 days); 3 = Late (>100 days) <div>1 0 6</div> Days from planting to harvest maturity <div></div> Heat units from planting to harvest maturity (optional). Specify base temperature used: _____ <div>1 0 3</div> Days from planting to harvest maturity of check variety (use check appropriate to market class shown in item 1)
CLASS	CHECK																										
1 = Navy (Pea)	Seafarer																										
2 = Small White	Aurora																										
3 = Black	Midnight																										
4 = Pinto	UI-114																										
5 = Great Northern	UI-59																										
6 = Small Red	NW-59																										
7 = Pink	Viva																										
8 = Cranberry	UI-50																										
9 = Dark Red Kidney	Montcalm																										
10 = Light Red Kidney	Redcloud																										
11 = Yellow Eye	Steuben																										
12 = Other (specify)																											

PLANT HABIT

<div>1</div> <p>1 = Ia Bush-determinate, strong and erect stem and branches 2 = Ib Bush-determinate, weak stem and branches 3 = IIa Erect growth habit-indeterminate, guides (runners) short or not developed 4 = IIb Erect growth habit-indeterminate, guides medium to long, with no ability to climb 5 = IIIa Vine-indeterminate, short guides with no ability to climb 6 = IIIb Vine-indeterminate, long guides with ability to climb 7 = IVa Indeterminate climbing, pods distributed throughout the plant 8 = IVb Indeterminate climbing, pods concentrated on the upper part of the plant</p>	<div>0 4 2</div> Average height of mature plant, in cm. <div>0 3 8</div> Average height of check variety, in cm. (use same check as above) <div>2</div> Pod Position: 1 = Low (lower pods touching soil surface) 2 = High (lower pods not touching soil surface) 3 = Scattered (not concentrated high or low) <div>1</div> Adaptability to machine harvest: 1 = Adapted 2 = Not Adapted <div>1</div> Lodging resistance: 1 = Good 2 = Fair 3 = Poor
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LEAFLET MORPHOLOGY (Use terminal leaflet of a fully expanded trifoliate)

<div>2</div> 1 = Smooth; 2 = Wrinkled <div>1</div> SHAPE: <div>2</div> APEX OF LEAFLET: <div>5</div> BASE OF LEAFLET:	<div>1</div> 1 = Dull; 2 = Glossy; 3 = Semiglossy; 4 = Variable <div>1</div> 1 = Ovate <div>2</div> 1 = Acute <div>1</div> 1 = Obtuse	<div>2</div> 2 = Lanceolate <div>2</div> 2 = Acuminate <div>2</div> 2 = Oblique	<div>3</div> 3 = Deltoid <div>3</div> 3 = Cuspidate <div>3</div> 3 = Cordate	<div>4</div> 4 = Cordate <div>4</div> 4 = Obtuse <div>4</div> 4 = Cuneate	<div>5</div> 5 = Rhomboid <div>5</div> 5 = Attenuate
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5. FLOWER COLOR AND DAYS TO BLOOM

☐ 1 COLOR OF STANDARD: 1 = White; 2 = Cream; 3 = Pink; 4 = Blue; 5 = Purple

☐ 1 COLOR OF KEEL: 1 = White; 2 = Cream; 3 = Pink; 4 = Blue; 5 = Purple

☐ 1 COLOR OF WINGS: 1 = White; 2 = Cream; 3 = Pink; 4 = Blue; 5 = Purple

☐ 5 ☐ 3 Days to 50% bloom

6. POD MORPHOLOGY (Green pod morphology optional)

Green Mature

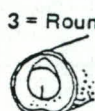
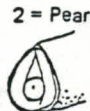
☐ ☐ 1 COLOR PATTERN: 1 = Solid; 2 = Striped; 3 = Blotched; 4 = Mottled; 5 = Other _____

☐ ☐ 5 PRIMARY COLOR: 1 = Purple; 2 = Red; 3 = Green; 4 = Yellow; 5 = Tan; 6 = Brown; 7 = Other _____

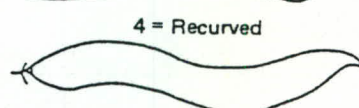
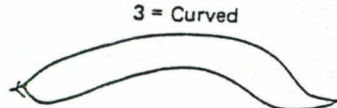
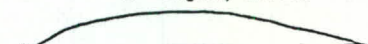
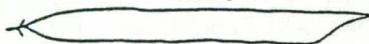
☐ ☐ 1 COLOR MODIFIER: 1 = Light; 2 = Light Medium; 3 = Medium; 4 = Medium Dark; 5 = Dark

☐ ☐ - SECONDARY COLOR: 1 = Purple; 2 = Red; 3 = Green; 4 = Yellow; 5 = Tan; 6 = Brown; 7 = Other _____

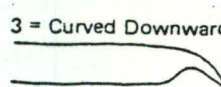
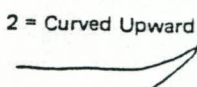
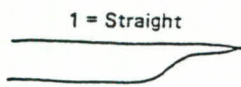
☐ ☐ 1 CROSS SECTION SHAPE: 1 = Flat 2 = Pear 3 = Round 4 = Figure Eight



☐ ☐ 2 POD CURVATURE: 1 = Straight 2 = Slightly Curved 3 = Curved 4 = Recurved



☐ ☐ 1 POD BEAK ORIENTATION: 1 = Straight 2 = Curved Upward 3 = Curved Downward 4 = Variable Average beak length, in cm. _____



☐ ☐ 2 CONSTRICTIONS: 1 = None; 2 = Slight; 3 = Deep

☐ ☐ Average number of seeds per pod

7. SEED COLOR

☐ 1 1 = Shiny; 2 = Dull; 3 = Semishiny; 4 = Variable

☐ 1 1 = Monochrome; 2 = Polychrome

☐ 0 ☐ 7 PRIMARY COLOR: 1 = White; 2 = Yellow; 3 = Buff; 4 = Tan; 5 = Brown; 6 = Pink; 7 = Red; 8 = Purple; 9 = Blue; 10 = Black; 11 = Other _____

☐ - ☐ - SECONDARY COLOR: 1 = White; 2 = Yellow; 3 = Buff; 4 = Tan; 5 = Brown; 6 = Pink; 7 = Red; 8 = Purple; 9 = Blue; 10 = Black; 11 = Other _____

☐ 1 COLOR PATTERN: 1 = Solid; 2 = Splashed; 3 = Mottled; 4 = Striped; 5 = Flecked; 6 = Dotted

☐ 1 HILAR RING: 1 = Absent; 2 = Present

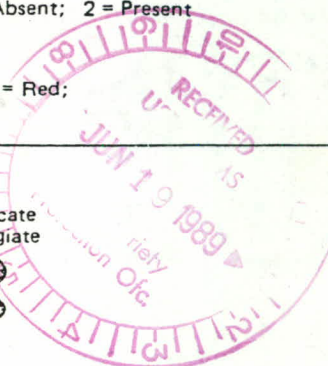
☐ - ☐ - HILAR RING COLOR: 1 = White; 2 = Yellow; 3 = Buff; 4 = Tan; 5 = Brown; 6 = Pink; 7 = Red; 8 = Purple; 9 = Blue; 10 = Black; 11 = Other _____

8. SEED SHAPE AND WEIGHT

☐ 4 SHAPE OF SEED TAKEN FROM MIDDLE OF POD: 1 = Round 2 = Oval 3 = Cuboid 4 = Kidney 5 = Truncate Fastigiate



☐ 4 ☐ 6 Dry seed weight in g/100g seeds (adjusted to 12% moisture)



9. ANTHOCYANIN PIGMENTATION

1 = ABSENT
2 = PRESENT☒ Flowers☒ Stems☒ Pods☒ Seeds☒ Leaves☒ Petioles☒ Peduncles☒ Nodes

10. KNOWN DISEASE REACTION

DISEASES - COMMON NAME: Anthracnose, Rust, Powdery mildew, Fusarium root rot, Pythium root rot, Rhizoctonia root rot, Pythium wilt, Sclerotinia white mold, Angular leaf spot, Bacterial wilt, Halo blight, Fuscous blight, Common bacterial blight, Red node virus, Pod mottle virus, Bean common mosaic virus, Bean yellow mosaic virus, Curly top virus, Bacterial brown spot, Bean southern mosaic virus, Other (specify) _____

REACTION: 1 = Susceptible; 2 = Resistant; 3 = Tolerant; 4 = Avoidance

(Give the common name (CN), scientific name (SN), and race(s), where applicable)

☒ DISEASE: CN Bean Common Mosaic V.; SN _____; Race(s) NY-15 NL-4☒ DISEASE: CN " " " "; SN _____; Race(s) NL-3☒ DISEASE: CN Curly Top Virus; SN _____; Race(s) _____☐ DISEASE: CN _____; SN _____; Race(s) _____☐ DISEASE: CN _____; SN _____; Race(s) _____☐ DISEASE: CN _____; SN _____; Race(s) _____

11. KNOWN INSECT/NEMATODE RESISTANCE

PESTS - COMMON NAME: Aphids, Bean pod weevil, Bruchid beetle, Corn earworm, Flea beetle, Leaf hopper, Lesion nematode, Lygus, Mexican bean beetle, Root knot nematode, Corn seed maggot, Spider mites, Thrips, Weevils, Western bean cutworm, Other (specify) _____

REACTION: 1 = Susceptible; 2 = Resistant; 3 = Tolerant; 4 = Avoidance

(Give the common name (CN), scientific name (SN), and biotype, where applicable)

☐ PEST: CN _____; SN _____; Biotype _____☐ PEST: CN _____; SN _____; Biotype _____☐ PEST: CN _____; SN _____; Biotype _____

12. KNOWN PHYSIOLOGICAL STRESS REACTION

1 = Susceptible; 2 = Resistant;
3 = Tolerant; 4 = Avoidance☐ Heat☐ Cold☐ Drought☐ Air Pollution

Nutrient toxicity or deficiency (specify nutrient) _____

Other _____

13. COMMENTS

EXHIBIT D

Additional Description of 'UI 722'

Table 1. Days to flowering and maturity, seed size, yield, growth habit, and lodging of the dark red kidney 'UI 722' and checks.

Location ¹	Nursery ²	Year	Entry ³	Days to ⁴		Harvest ⁵	100 seed	Yield	Growth	
				Bloom	Physiol. Maturity					
						Maturity	wt.(g)	(Kg/Ha)	Habit	Lodging
Kimberly CDBN		1988	UI 722	59 a	94 a	102	46.6 a	1542 a	I	2.2 a
			Montcalm	47 a	89 c	97	41.3 b	1727 a	I	2.6 a
			Royal Red	59 a	92 b	100	41.2 b	1900 a	I	2.3 a
			Redcloud	44 b	87 c	95	45.8 a	1592 a	I	1.9 a
Parma CDBN		1988	UI 722	48 a	91 a	98	40.7 a	1956 b	I	2.4 ab
			Montcalm	45 b	86 b	97	39.9 a	1683 c	I	2.8 b
			Royal Red	45 b	86 b	96	38.0 a	2542 ab	I	2.3 ab
			Redcloud	41 c	85 b	96	42.4 a	2305 ab	I	1.8 a
Parma MISC		1988	UI 722	47 a	91 a	99	39.0 a	1819 a	I	2.6 a
			Montcalm	45 b	88 b	97	34.8 b	1552 a	I	3.2 b
			Redcloud	43 c	87 b	96	41.0 a	2036 a	I	2.3 a
Kimberly MISC		1988	UI 722	59 -	94 -	102	47.0 a	1426 a	I	2.3 -
			Montcalm	52 -	90 -	98	42.4 a	1667 a	I	2.3 -
			Redcloud	44 -	91 -	99	45.3 a	1531 a	I	2.3 -
Kimberly CDBN		1987	UI 722	51 a	110 a	118	56.4 a	2794 a	I	2.5 a
			Montcalm	47 a	100 b	108	49.3 a	1641 b	I	2.0 b
			Sacramento	38 b	91 c	99	50.1 a	1566 b	I	1.0 c
			Redcloud	37 b	96 bc	104	53.2 a	1943 b	I	2.0 b
Parma CDBN		1987	UI 722	-	110 a	118	46.5 a	2037 a	I	-
			Montcalm	-	109 a	117	45.5 a	1672 a	I	-
			Sacramento	-	90 b	98	47.2 a	1476 a	I	-
			Redcloud	-	95 b	103	50.2 a	2232 a	I	-
Kimberly MISC		1986	UI 722	-	85 -	93	52.3 -	2390 -	I	-
			Redcloud	-	82 -	90	48.3 -	2766 -	I	-
Kimberly MISC		1985	UI 722	-	98 -	106	50.8 -	2822 -	I	-
			Isabella	-	92 -	100	51.2 -	2535 -	I	-
			Redcloud	-	95 -	103	51.2 -	2938 -	I	-
Freeville, NY		1987	UI 722	-	136 -	-	67.8 a	2171 b	I	-
			Montcalm	-	119 -	-	65.4 a	2807 a	I	-
			Royal Red	-	135 -	-	66.7 a	1543 c	I	-
Churchville, NY		1987	UI 722	-	-	-	59.1 a	2913 a	I	-
			Montcalm	-	-	-	57.0 b	2129 b	I	-
			Royal Red	-	-	-	54.0 b	2831 a	I	-

Location ¹	Nursery ²	Year	Entry ³	Days to ⁴		Harvest ⁵	100 seed Yield	Growth	
				Bloom	Physiol. Maturity			Habit	Lodging
Penn Yan, NY		1987	UI 722	-	-	-	69.2 a	3238 a	I -
			Montcalm	-	-	-	63.2 b	3160 a	I -
			Royal Red	-	-	-	61.9 b	915 b	I -
Average (excluding NY)			UI 722	53	97	105	47.5	2098	I 2.4
			Redcloud	42	90	98	47.2	2168	I 2.1
Average, 1987-88 (excluding NY)			UI 722	53	98	106	46.0	1929	I 2.4
			Montcalm	47	94	103	42.2	1657	I 2.6
			Redcloud	42	90	99	46.3	1940	I 2.1
Average, 1988 CDBN			UI 722	54	93	100	43.6	1749	I 2.3
			Montcalm	46	88	97	40.6	1705	I 2.7
			Royal Red	52	89	98	39.6	2221	I 2.3
			Redcloud	43	86	96	44.1	1948	I 1.9
Average, 1987 (excluding NY)			UI 722	51	110	118	51.5	2416	I 2.5
			Montcalm	47	105	113	47.4	1656	I 2.0
			Sacramento	38	91	99	48.7	1521	I 1.0
			Redcloud	37	96	104	51.7	2088	I 2.0

¹ Data from New York State were provided by Don Halseth, Department of Vegetable Crops, Cornell University.

² With the exception of the 1985 and 1988 Kimberly Miscellaneous nurseries, plots consisted of four rows replicated three or four times. The 1985 and 1988 Kimberly Miscellaneous trials were two row plots replicated two and three times, respectively.

³ 'Redcloud' and 'Sacramento' are light red kidney cultivars. All others are dark red kidneys.

⁴ Numbers followed by different letters indicate statistical significance at P=0.05 using LSD or DNMR tests. Comparisons are valid only within nursery/year/locations.

⁵ Readings taken at physiological maturity (80-90% buckskin pods). Harvest maturity averages eight days later at these locations.

Exhibit D.

Additional Description of Variety

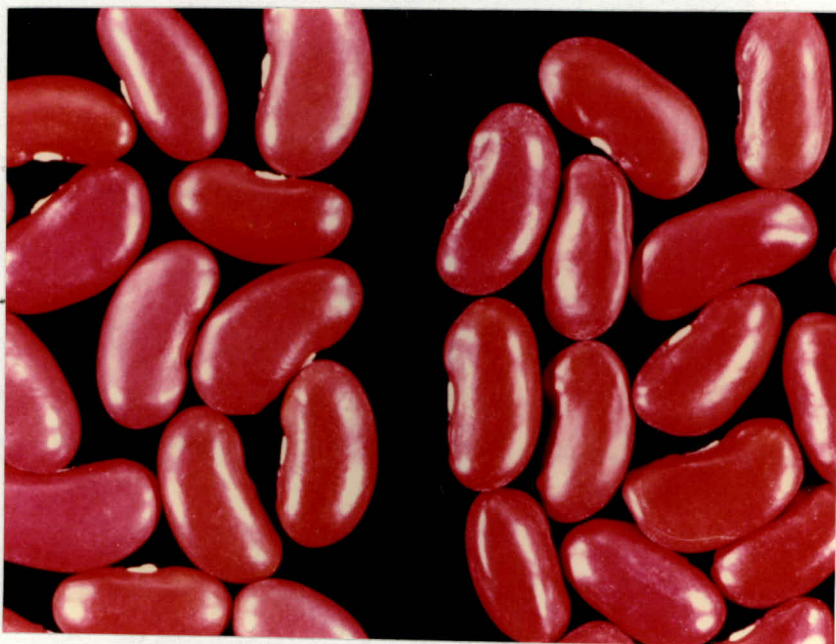


Plate 1. Photograph of seed of UI 722 (left) and Montcalm (right) showing differences in size and shape. Color reproduction may not be accurate so may only be used to judge relative differences.

Exhibit E

Statement of Ownership

The cultivar 'UI 722' was developed through the process of sexual hybridizaion and subsequent selection as part of an ongoing breeding program at the University of Idaho. Sole and exclusive rights to 'UI 722' are the rights of the University of Idaho. This cultivar will be handled by the Director of the Idaho Agricultural Experiment Station as a public variety. Seed of this variety may not be sold as an uncertified class as stated in Title V of the Federal Seed Act. No exclusive and binding contracts may be entered into with any commerical organization.

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